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| Nota di contenuto | Cover; Copyright; Contents; PREFACE; 1 INDICES AND LOGARITHMS; Indices; Behaviour of Indices; Logarithms; Test Examples 1; 2 ALGEBRA; Simplification of Algebraic Expressions; Highest Common Factor (HCF) and Lowest Common Multiple (LCM); Algebraic Fractions; Expansions and Factors; Polynomial Division; Factorisation; Evaluation; Test Examples 2; 3 SIMPLE EQUATIONS; Further Examples on Simple |

Equations; Summary of the Important Points; Practical Problems Involving Simple Equations; Further Problems; Problems Involving Simple Equations; Transposition of Formulae; Partial Fractions Logarithmic or Indicial EquationsTest Examples 3; 4 SIMULTANEOUS EQUATIONS; Two Unknowns Where the Coefficients Are Whole Numbers; Two Unknowns Where the Coefficients Are Fractions; Two Unknowns Where the Coefficients Are Decimals; Two Unknowns Involving Reciprocals; Practical Problems: Simultaneous Equations in Two Unknowns; A More Complicated Situation; Test Examples 4; 5 QUADRATIC EQUATIONS; Solution by Factorisation; Solution by 'Completing the Square'; Solution of Quadratic Equations by Formula; Simultaneous Equations - One Linear and One Quadratic; Recap: Polynomial Division
Function NotationCubic Equations; The Factor Theorem; Test Examples 5; 6 GRAPHS; Plotting of Straight-Line Graphs; Determining the Equation to a Straight-Line Graph; Graphical Solution of Simultaneous Linear Equations; Graphical Solution of Quadratic Equations; Graphical Solution of Simultaneous Quadratic and Linear Equations; Determination of laws; Curve Sketching; Test Examples 6; 7 TRIGONOMETRY AND GEOMETRY; Measurement of Angles; Trigonometric Ratios; Alternative Notation for the Right-Angled Triangle, ABC; Properties of Angles and Straight Lines; Theorem of Pythagoras
Examples Where Trigonometry can be UsedBearings; Coordinate Systems; The Equation of a Sine Wave; Sinusoidal Waveforms; Addition of Sine Waves of Equal Frequency; Theory; Relationships Between Sine, Cosine and Tangents of Angles; Identities; Introduction to Hyperbolic Functions; Hyperbolic Identities; Solving Equations Using Hyperbolic Functions; Addition of sinh(ax) and cosh(ax); Basic Hyperbolic Trigonometric Identities; Latitude and Longitude; Longitude and Time; Test Examples 7; Circle Theorems; Definition; 8 SOLUTION OF TRIANGLES; Inverse Trigonometric Functions
Cosine Rule and the Sine Rule for Non-Right-Angled TrianglesPlane Trigonometry - Sine and Cosine Rules; Application of Trigonometry; Areas of Triangles; Double Angles; Test Examples 8; 9 MENSURATION OF AREAS; Units; Sector of a Circle; Segment of a Circle; Ellipse; Surface of a Cylinder; Surface of a Sphere; Test Examples 9; 10 VOLUME - MASS, CENTRE OF GRAVITY, MOMENT; Prisms; Pyramids; Oblique Prisms and Pyramids; Frustums; Test Examples 10; 11 DIFFERENTIAL CALCULUS (DIFFERENTIATION); Gradient of a Straight Line; Infinitesimally Small Changes 'd'; Zero Gradient; Gradient of a Curve Differentiation from First Principles

Sommario/riassunto

"This indispensible guide to ship stability covers topics such as flotation and buoyancy, small angle, large angle and longitudinal stability, water density effects, bilging, ship resistance, and advanced hydrostatics. Each chapter has a comprehensive list of aims and objectives at the start of the topic, followed by a check-list at the end of the topic for students to ensure that they have developed all the relevant skills before moving onto the next topic area. The book features over 170 worked examples with fully explained solutions, enabling students to work through the examples to build up their knowledge and develop the necessary key skills. The worked examples, which range in difficulty from very simple one-step solutions to SQA standard exam questions and above, are predominantly based on a hypothetical ship, with the reader supplied with extracts from a typical data book for the ship which replicates those found on real ships, enabling the reader to develop and practise real-life skills"--Abstract.